By the plan of artificial propagation herein outlined and liberation of large numbers of parasites early in the spring where it is desired to carry on a campaign against the stable fly, we can reasonably expect them to be an important factor in the control of this pest.

A NEW GENUS OF MALLOPHAGA.[1]

By John Howard Paine.

Bureau of Entomology, United States Department of Agriculture.

Through the kindness of the United States Biological Survey, the writer has been able to make a collection of Mallophaga from bird skins taken in Panama. Among the resulting specimens is a most curious form which is not referable to any of the known genera, and for which, therefore, the founding of a new genus becomes necessary.

Ancistrocephalus gen. nov.

A single male specimen was taken from the skin of a ground dove, *Chæmepelia rufipennis* (Rio Indio, Canal Zone, March 3, 1911). In this specimen the antennæ show but three segments, being most probably due to the loss of the terminal two. This is borne out by the fact that the tip of the third segment, under high magnification, appears unfinished, as though other segments had been attached. The genus therefore, having two-clawed tarsi, falls into the family *Philopteridæ*. Following are given the characters of the genus:

Small species with head broader than long and bearing extremely long hairs on the head and body; these hairs are the longest I have seen on any Mallophagan. Front broad, flattened, almost straight, with lateral angles produced into long, curved, heavily chitinized backward projecting hooklike appendages. Antennæ well developed, in the male at least, and arising from deep lateral emarginations, situated before the middle, affording a certain resemblance to some of the mammal infesting genera. Temples squarish, bearing extremely long hairs; occiput broad, almost straight. Abdomen broad, segments with posterior lateral angles produced into slightly curved, chitinized processes, giving the lateral edges of the abdomen a highly serrate appearance. Last segment in male entire.

[1] Published by permission of the Chief of the Bureau of Entomology.

Ancistrocephalus kelloggi sp. nov. (Fig. 1.)

A single male specimen taken from the skin of a ground dove, *Chæmepelia rufipennis* (Rio Indio, Canal Zone, March 3, 1911)

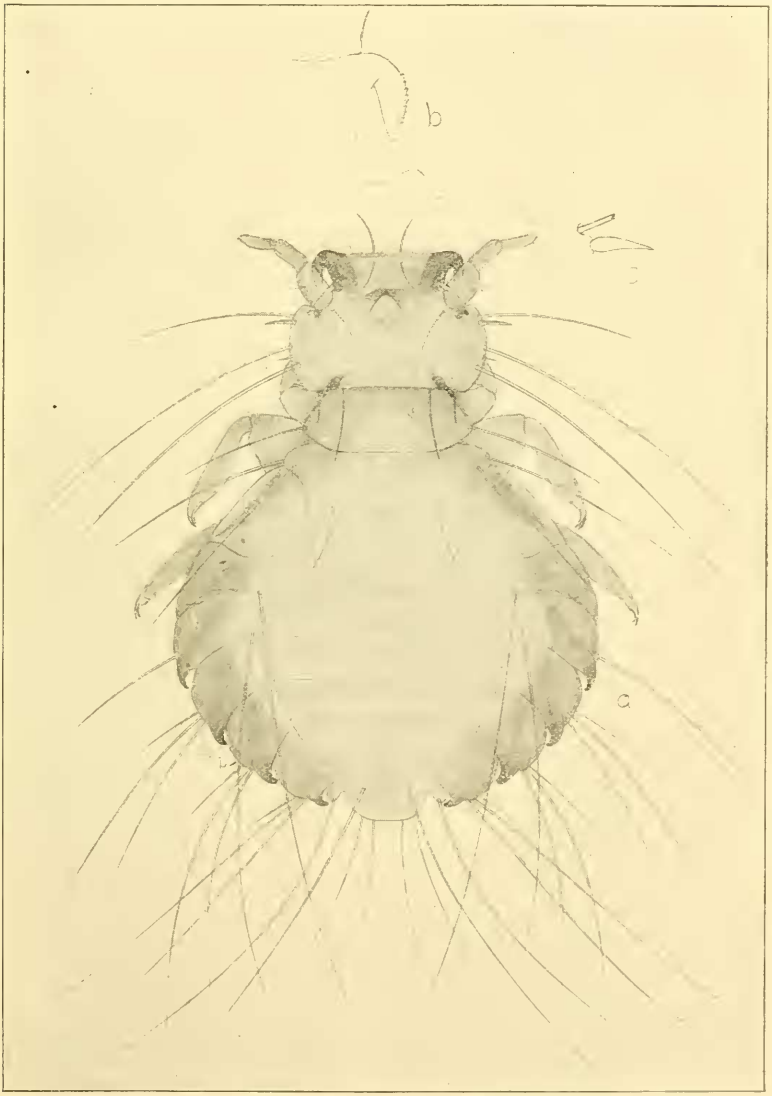

Fig. 1. *Ancistrocephalus kelloggi* sp. nov., male. *a*, dorsal view; *b*, anterior lateral angle of head; *c*, lateral spine on head.

in the collection of the Biological Survey, United States Department of Agriculture, at the National Museum. A minute species with short, broad body.

Description of male: Head two-thirds as long as broad. Front flattened, almost straight, set in between the prominent hook-like anterior lateral angles; these angles projecting forward slightly beyond the clypeal front, are heavily chitinized and bent backward to form sharp hooks with finely serrated outer margins (Fig. 1, *b*). Front between hooks with a narrow marginal band bearing four hairs on each side, the second from the center being the longest; also several hairs projecting from the ventral surface, not shown in the figure, and a hair on the anterior extremity of the lateral hooks. A hair on each side on the dorsal surface near the anterior margin, another in front of the antennæ and a longer one near the innner extremity of the lateral emarginations. Sides of head before the middle deeply emarginate for the reception of the antennæ. Antennæ long, first segment enlarged, about as long as the second, with third a little shorter and diminishing in thickness; last two segments missing. Antennal bands forming the basal marginal portion of the lateral hooks. Eyes indefinite, located on the anterior, forward projecting angles of the temples with a small occular fleck. Occular blotch small, colored. Temples squarish, but little rounded and slightly narrowing behind; one very long marginal hair just behind the eye and two still longer ones arising about half way back, these latter reaching onto the third segment of the abdomen; a short spine near the posterior angle, another between the two long hairs just mentioned, and a peculiar, long, heavy spine just behind the anterior hair (Fig. 1, *c*). Occiput broad, straight, with broadly separated occipital blotches; two hairs on each side, the outer, shorter one near the lateral angles of the head; occipital bands and signature absent.

Thorax long, slightly wider than head. Prothorax with sides straight, diverging, and posterior margin rounded at the sides but straight across the middle. Lateral angles probably with a long hair, broken off in the specimen at hand, leaving definite pustule. Metathorax quadrilateral with anterior lateral angles protruding, bearing two prominent pustules from which the hairs have been broken; this segment much narrower than the first segment of the abdomen and embraced by it, extending to its posterior margin and dividing it into two lateral, triangular portions; posterior margin of metathorax not visible. A dorsal hair on each side, midway between the anterior and posterior margins. Legs with femora broad, those of hind legs not projecting beyond the sides of the abdomen, their articulation being well in toward the meson; tibiæ long and narrow.

Abdomen circular, a little wider than long, widest at third segment, with broad lateral bands and faint transverse blotches. Posterior lateral angles of segments two to six produced into a chitinized, slightly in-curved appendage which extends inward and forward as an internal chitinized band to the anterior margin of the segment. First segment longest with uncolored, diverging sides; seventh segment much reduced, shorter than the preceding one and bearing a very long hair; last segment rounded, entire, bearing two very long hairs on the dorsal surface and four shorter ones on the posterior margin. Segments three to six with very long lateral hairs arising before the lateral appendages. An extremely long dorsal hair on the

posterior margin on each side of segments two and three, situated a short distance in from the lateral bands and extending far beyond the end of the body; others very small, occupying similar positions on segments four and five; these appear to be the only dorsal hairs. Genitalia with long, slender external appendages, not heavily chitinized.

	Measurements: ♂, length 1.000 mm.	Width
Head	.246	.344
Prothroax	.100	.278
Metathroax	.196	.360
Abdomen	.623	.754

NOTES ON THE DURATION OF THE PUPAL STAGE IN CERTAIN LEPIDOPTERA.

By Phil Rau.
St. Louis, Mo.

1. Grapta interrogationes Fab.

The larvæ of this insect were observed upon their food-plant, the hop vine, from the time of pupation to the time of emergence as adults, covering the period from August 28 to September 21, 1910. The duration of the pupal period was as follows:

Days.	No. of insects.
9	1
10	6
11	2
12	0
13	2

We see that in these eleven individuals this period varied from 9 to 13 days, in most of them 10 days. Mr. W. H. Edwards[1] finds that the duration of the pupal stage at Coalburgh, West Va., is from 7 to 11 days, a little shorter than at St. Louis.

2. Samia cecropia Linn.

The notes on three insects of this species are as follows:

Sex.	Date of pupating.	Date of Emerging.	Duration.
♂	7/20/'10	6/3/'11	318 Days.
♀	7/27/'10	6/5/'11	313 "
♀	7/15/'11	6/4/'12	324 "

[1] Can. Ent. Vol. XV. p. 204.